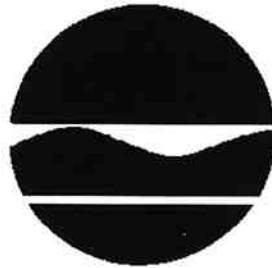


**SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010**

SITE ID 308: WILL & BAUMER, INC.

SITE SUMMARY REPORT



**Onondaga Lake Project
Task 5: 104(e) Review**

**Site No. 734030-002
Work Assignment Number D003060-27**

Prepared by

TAMS Consultants, Inc.
655 Third Ave.
New York, New York 10017

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1.0 SITE DESCRIPTION

The information referenced in this report was mainly obtained from the 104(e) responses of Will & Baumer, Inc. (Will & Baumer, Company ID 2048). Three mailings were received from Will & Baumer dated November 13, 1996, April 7, 1997, and September 28, 2000. The second mailing was not based on a NYSDEC supplemental request for information, while the third mailing was in response to a July 26, 2000 NYSDEC supplemental request for information. Information obtained from other sources is noted, as necessary.

1.1 Location

The Will & Baumer facility is located at 100 Buckley Road in Liverpool, New York, in Onondaga County. Figure 1 shows the location of the facility in relation to Onondaga Lake. The site is bound by Buckley Road to the west, Interstate Highway 81 to the east, Onondaga Lake Parkway to the south, and Greenfield Parkway and the Salina Office Park to the north. The site location is shown on the USGS topographic map in Figure 2. The site is approximately thirteen acres (Mailing No. 2, p. 002724).

1.2 Geology

The surficial geology of the Syracuse area was strongly influenced by the most recent glacial advance (Wisconsin age, 12,000 to 14,500 years ago). The area occupies a region that was covered by Lake Iroquois, a large glacial lake situated in front of the ice margin. The broad flat-lying plains situated north from Syracuse to Lake Ontario were formed beneath Lake Iroquois and are characterized by lacustrine fine sand and silt deposits. Additional glacial features common to the region are moraines, drumlins, U-shaped valleys, and meltwater channels. Onondaga Lake and all its major tributaries lie within glacial meltwater channels. These features originally were conduits carrying meltwater at large volumes and high

velocities away from the glacier. Sediment types characteristically found in meltwater channels are sands and gravels. These relict features form important water bearing and transmitting units which form an irregularly branching, net-like pattern.

The bedrock geology of the greater Syracuse area includes Lower to Middle Paleozoic age sedimentary rocks predominated by carbonate (dolostone and limestone) and shale, and containing some sandstone, siltstone, and evaporites. Bedrock directly beneath the area (as well as underneath Onondaga Lake) is Silurian Vernon Shale (Rickard and Fischer, 1970) which has low permeability, but does possess secondary porosity due to fractures.

Soil boring logs were not provided by Will & Baumer. Will & Baumer makes reference to a "Science" article, Volume XVIII, No. 444 dated July 3, 1903, which states there is "3 to 9 feet of peat and marl at the Will & Baumer site" (Mailing No. 1, p. 001436). Also, a shallow clay layer was noted approximately 2.5 to 3 feet below existing grade during delineation of a fuel spill on the southeast edge of the Will & Baumer property (Mailing No. 1, p. 001616).

1.3 Hydrogeology

According to the Syracuse West USGS quadrangle map, the range of ground surface elevations at the Will & Baumer site is approximately 375 to 395 feet NGVD (see Figure 2). Groundwater elevation data were not provided by Will & Baumer. However, there was a well used to extract groundwater and reinject non-contact cooling water which was pumped and filled in on November 18 and 19, 1988, and the water level of the well before it was closed was field-measured at 6 feet below ground surface (Mailing No. 1, pp. 001435 - 001457). Shallow groundwater is expected to flow southeast towards Ley Creek (approximate elevation 365 feet NGVD) or southwest towards Onondaga Lake (approximate elevation 363 feet NGVD) based on ground surface contours.

1.4 Surface Water Hydrology

The Will & Baumer property is located less than 1,000 feet northeast from the eastern shore of Onondaga Lake, and approximately 1,300 feet northwest of Ley Creek. The facility is upgradient of both surface waters. A site map which was provided in the first mailing (p. 001933), and is shown as Figure 3 herein, indicates there is a swale which leads to Ley Creek. The dimensions of the swale were not noted in the documents that were reviewed and Figure 3 was not drawn to scale. The only measure to prevent off-site contamination from surface runoff that was described in the documents reviewed was a bermed area used to contain soil contaminated with fuel oil before its transport off-site (Mailing No. 1, pp. 001616 - 001619). The bermed containment area was both lined and covered with polyethylene sheeting, however, its exact location was not indicated.

Will & Baumer submitted a NYSDEC State Pollutant Discharge Elimination System (SPDES) Storm Water General Permit Coverage Notice for its facility that was dated May 6, 1994, as well as a March 22, 1994 NYSDEC Notice of Intent (NOI) to discharge stormwater (Mailing No. 1, pp. 001955 - 001959). The NOI indicated that Ley Creek is the receiving water body. Also included was an application for a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Stormwater Associated with Industrial Activity dated October 1, 1992. The permit application refers to one outfall location that discharges stormwater into a drainage swale to Ley Creek (Mailing No. 1, pp. 001960 - 001968). It is likely that this drainage swale is the same swale shown in Figure 3 herein. It should be noted that in their first submittal, Will & Baumer stated that the on-site drainage swale discharges “to Bear Trap Creek to Ley Creek” (Mailing No. 1, p. 000013). However, Beartrap Creek is approximately 4,000 feet upgradient from the Will & Baumer site, and therefore, unlikely to receive the facility’s runoff (see Figure 2). In their third submittal, Will & Baumer stated “the swale’s [sp] receiving water, if any, is Ley Creek and not Bear Trap Creek” (Mailing No. 3, p. 000009).

2.0 SITE HISTORY

2.1 Owners/Operators

Will & Baumer has operated at its current location of 100 Buckley Road in Liverpool, in the Town of Salina, Onondaga County, New York since 1901 (Mailing No. 2, p. 002724). On a NYSDEC hazardous waste disposal questionnaire dated July 31, 1986, Will & Baumer stated that their company has not operated at any location prior to 100 Buckley Road (Mailing No. 1, p. 001665). In the C&S Engineers Phase I Environmental Audit (November 17, 1992), it was also indicated that Will & Baumer operated at the site from 1972 to 1978 as a subsidiary of the Syracuse China Company and from 1979 to 1984 as a subsidiary of W&F Manufacturing Company, Inc. (Mailing No. 2, pp. 002726 - 002727).

2.2 Site Operations

The Will & Baumer facility (SIC code 3999) has been used to manufacture candles since 1901. The facility processes, as described in Will & Baumer's three mailings, are described below. Details regarding the types of wastes that are generated on-site are provided in Section 2.3. A site plan provided by Will & Baumer is provided herein as Figure 3 (Mailing No. 1, p. 001933). Candles are manufactured from beeswax, various paraffins, stearic acid (beef tallow products), vegetable oil, and cotton wick, then packaged and stored on-site for shipping to Will & Baumer customers. Manufacturing operations include bleaching, molding, dipping, liquid filling, extrusion, compression and painting (Mailing No. 1, pp. 000004 - 000005).

- The candles are made either by molding, dipping, liquid filling, extrusion, or compression (Mailing No. 3, p. 000004). Details of these processes were not included in the Will & Baumer submittals.

- A bleaching process is used by Will & Baumer to bleach the beeswax before candle production. The first step in the bleaching process involves the boiling of 5,000 to 6,000 pounds of crude beeswax with water for 2 hours and settling the mixture overnight (Mailing No. 3, p. 000003). Water is then drawn off of the bottom of the crude tank before the wax is pumped to the slurry tank, where it is combined with activated carbon (charcoal) and a clay material known as "filtrol" for 2 hours. The slurry is passed through a filter press, which removes the charcoal and filtrol from the beeswax, and conveyed into the bleach tank. In the bleaching tank, the beeswax is brought to a boil with water, phosphoric acid, and potassium permanganate for at least 2 hours, shut off, and allowed to settle overnight. The beeswax is pumped to the washboil tank, where it is washed by boiling with water for 20 minutes, then shut off and allowed to settle. The bleached beeswax is used for production immediately, or made into slabs for storage until it is used at a later date.
- The spray paint booth in the Quonset building (see Figure 3) incorporates electrostatic automatic paint applicators which are used to color various glass candle containers. During the painting operation, overspray passes through filters to remove particulates, and remaining paint vapors are exhausted through a vent to the outdoors (Mailing No. 1, pp. 002030 - 002031). Will & Baumer states on a 1987 Waste Minimization Report to the USEPA that "conversion from lacquer paints to waterbase paints was found not to be an opportunity due to the hazardous waste nature with heavy metals" (Mailing No. 1, p. 001679), but it was not indicated if this was the result of research, or an actual implementation attempt. Filters were not put into use at Will & Baumer for paint spraying until 1988/1989 (Mailing No. 1, p. 000007).

2.3 Generation and Disposal of Wastes

The hazardous and non-hazardous wastes listed below have been generated at the Will & Baumer facility. Results of laboratory analyses of the wastes are discussed, when available. Wastes generated include asbestos waste, office waste, hazardous and non-hazardous paint filters, non-hazardous waste oil, waste wax, and other hazardous wastes such as flammable solids, unspecified laboratory waste, parts cleaner and still bottoms, petroleum distillate, 1,1,1-trichloroethane, and hazardous waste oil. Sanitary wastewater, wastewaters from the bottle cleaning operations, pH neutralized boiler condensate, treated water from the bleaching process, and water from the regeneration of water softeners are the five waste streams that are currently permitted for discharge to the sanitary sewer (Mailing No. 1, p. 001863). In addition, Will & Baumer indicated that non-contact and contact cooling water is also discharged to the sewer system (Mailing No. 3, p. 000004). Only stormwater is permitted for discharge to nearby surface waters. Descriptions of the on-site materials storage facilities were provided by Will & Baumer and are also summarized herein. Table 1 indicates the types and quantities of generated wastes as well as the disposal dates and locations.

- During candle production, wastewater and other wax wastes are generated. The wastewater streams are generated by the molding process, which requires primarily non-contact recirculated cooling water; the dipping process, which requires contact cooling water for the chilling and finishing of candles, and which is discarded weekly; liquid filling, which requires non-contact recirculated cooling water; extrusion, which requires both contact and non-contact cooling water; and compression, which requires no cooling water (Mailing No. 3, p. 000004). Wastewaters are disposed of via the Onondaga County sewer system, as discussed below. Other wastes which are generated by these processes include off-spec wax

Table 1: Summary of Generated Wastes

Waste Type	Estimated Quantity	Date or Period of Disposal	Disposal Site
Industrial Waste Paint Filters (Mailing No. 1, pp. 000245 - 000258)	2,500 lbs (25 55-gallon drums)	8/19/93	Clean Harbors of Baltimore, Baltimore, MD
	1,600 lbs (16 55-gallon drums)	9/13/90	Frontier Chemical Waste Process Inc., Niagara Falls, NY
Non-Hazardous Waste Oil (Mailing No. 1, pp. 000273 - 000274, 000282 - 000286)	220 gallons	11/14/95	Hukill Chemical Co, Bedford, OH
	13,000 gallons	4/28/92 ¹	Cibro Petroleum, Albany, NY
	25 drums	7/92 ¹	Cibro Petroleum, Albany, NY
Non-Hazardous Waste Oil and Soil ¹ (Mailing No. 1, pp. 000300 - 000305, 000307, 000310 - 000313)	38.91 tons	1/12/93	Clean Berkshires Inc, Pittsfield, MA
	22.36 tons	1/13/93	Clean Berkshires Inc, Pittsfield, MA
	8.58 tons	5/7/93	Clean Berkshires Inc, Pittsfield, MA
Asbestos Waste (Mailing No. 1 pp. 000316 - 000321)	449 bags	8/27/86	Seneca Meadows Landfill, Seneca Falls, NY
	65 bags	11/6/86	Seneca Meadows Landfill, Seneca Falls, NY
Parts Cleaner (Hazardous Waste) (Mailing No. 1, pp. 001488 - 001506)	13.72 gallons ²	10/92 - 12/92	Safety-Kleen Corp, Syracuse NY
	23 gallons	1/93 - 12/93	Safety-Kleen Corp, Syracuse NY
	13 gallons	1/94 - 12/94	Safety-Kleen Corp, Syracuse NY
	34 gallons	1/95 - 12/95	Safety-Kleen Corp, Syracuse NY
	20 gallons	1/96 - 8/96	Safety-Kleen Corp, Syracuse NY

Table 1: Summary of Generated Wastes (continued)

Waste Type	Estimated Quantity	Date or Period of Disposal	Disposal Site
Parts Cleaner, Still Bottoms (Hazardous Waste) (Mailing No. 1, pp. 001509 - 001514)	5 drums	8/4/80	Haz-O-Waste Corporation, Wampsville, NY
	30 drums	10/5/81, 5/13/81	Haz-O-Waste Corporation, Wampsville, NY
	22 drums	6/28/82	Haz-O-Waste Corporation, Wampsville, NY
	26 drums	3/21/83	Haz-O-Waste Corporation, Wampsville, NY
	31 drums	3/31/84	Haz-O-Waste Corporation, Wampsville, NY
Still Bottoms (Hazardous Waste) (Mailing No. 1, pp. 001517 - 001554)	2,090 gallons	7/26/85	Solvents & Petroleum Service, Inc, Syracuse, NY
	495 gallons	2/20/86, 9/15/86, 12/15/86	Solvents & Petroleum Service, Inc, Syracuse, NY
	518 gallons	3/13/87, 6/12/87, 9/18/87, 12/17/87	Solvents & Petroleum Service, Inc, Syracuse, NY
	43 gallons	3/11/88, 6/12/88, 9/18/88, 12/16/88	Solvents & Petroleum Service, Inc, Syracuse, NY
	66 gallons	3/17/89, 6/16/89, 12/15/89	Solvents & Petroleum Service, Inc, Syracuse, NY
	61 gallons	3/16/90, 6/25/90, 9/17/90, 12/18/90	Solvents & Petroleum Service, Inc, Syracuse, NY
	36 gallons	12/8/92	Solvents & Petroleum Service, Inc, Syracuse, NY

Table 1: Summary of Generated Wastes (continued)

Waste Type	Estimated Quantity	Date or Period of Disposal	Disposal Site
Laboratory Waste (Hazardous Waste) ³ (Mailing No. 1, pp. 001530 - 001546)	5 gallons	1987 ⁴	Solvents & Petroleum Service, Inc, Syracuse, NY
	5 gallons	1988	Solvents & Petroleum Service, Inc, Syracuse, NY
	5 gallons	1989	Solvents & Petroleum Service, Inc, Syracuse, NY
Flammable Solids (Hazardous Waste) (Mailing No. 1, p. 001553)	55 gallons	7/26/85	Solvents & Petroleum Service, Inc, Syracuse, NY
1,1,1-Trichloroethane (Hazardous Waste) (Mailing No. 1, p. 001551)	55 gallons	2/20/86	Solvents & Petroleum Service, Inc, Syracuse, NY
Petroleum Distillate (Hazardous Waste) (Mailing No. 1, p. 001549)	165 gallons	9/15/86	Solvents & Petroleum Service, Inc, Syracuse, NY
Hazardous Waste Oil (Hazardous Waste) (Mailing No. 1, p. 001572)	440 gallons	3/15/89	Solvents & Petroleum Service, Inc, Syracuse, NY

Source: Will & Baumer, Mailing No. 1, pp. 000007 - 000011, and as listed above.

Notes:

1. These wastes result from closure and remediation of leaking fuel tanks on the southeast perimeter of the site.
2. It should be noted that while 13.72 gallons were indicated in Mailing No. 1 (p. 000009), the provided manifests (Mailing No. 1, pp. 001505 - 001506) add up to 9 gallons.
3. These wastes were carried away as hazardous waste with the still bottoms, and therefore, are not listed separately on the hazardous waste manifests (Mailing No. 1, p. 000009).
4. Quantities are unknown prior to this date.

and candles, which are recycled; waste wax and non-useable wax, such as floor scrapings or paraffin wax and animal tallow, which are disposed of as industrial waste; waste cotton wick, which is disposed of as industrial waste; and off-spec glass bottles, which are washed and either reused or disposed of as industrial waste (Mailing No. 3, p. 000002).

- Industrial wastes, including wax scraps and cotton wicks, generated in production of candles as described above, were collected, stored in “portable trash containers in their respective areas of production and then transferred to the trash compactor for disposal” (Mailing No. 3, p. 000004). Buildings in which these wastes were temporarily stored are the Candle Plant, Packaging building, Vassar building, the Glass building and the Extruder building. Industrial wastes also include non-recyclable office wastes such as cafeteria wastes (Mailing No. 3, p. 000006).

Industrial wastes were transported off-site from Will & Baumer approximately bi-monthly by Raite Rubbish Removal (approximately 210 tons from April 1993 to November 1996, which is the date of Will & Baumer’s first submittal) and A&T Haulers (approximately 1,131 tons from March 1984 through March 1990). The noted disposal facilities were OCRRA in North Syracuse, New York, and Cicero Wood Recovery in Syracuse, New York (Mailing No. 1, p. 000006). Approximately 8.4 tons of scrap wood pallets were delivered to Cicero Wood Recovery on May 29, 1992 and June 2, 1992 (Mailing No. 1, pp. 000073 - 000074, 000089). It should be noted that while Mailing No. 1 (p. 000006) lists OCRRA and Cicero Wood Recovery as the only disposal facilities of industrial wastes, the invoices included in the first mailing (pp. 000026 - 000243) indicate five shipments in February and March of 1989 of industrial wastes disposed of at the Town of Dewitt Landfill (Mailing No. 1, pp. 000143 - 000144, 000146). Will & Baumer noted that the amounts of

industrial waste generated and the disposal facilities used prior to 1984 were not known at the time of their November 13, 1996 submittal (Mailing No. 1, p. 000006).

- Used paint filters resulting from spraying operations as described above were stored in 55-gallon fiber drums with locking covers in the Quonset building during painting operations, and then transferred to the Beeswax Storage building before being transported to either Clean Harbors of Baltimore, Maryland, or Frontier Chemical Waste Process Inc., of Niagara Falls, New York (Mailing No. 1, p. 000007). It was not indicated if there were other shipments of waste paint filters. Will & Baumer conducted analytical testing of the paint filters between 1989 and 1990 and the results are discussed in Mailing No. 1 (pp. 000255 - 000270). The filters were, on separate occasions, tested for metals, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). Of the parameters analyzed for, there were detections of methyl ethyl ketone at a concentration of 23 mg/kg (wet weight), from a grab sample collected on October 25, 1990 (Mailing No. 1, p. 000255) and chloroform at a concentration of 0.46 mg/L (based on TCLP testing) from an overspray filter collected on June 22, 1990 (Mailing No. 1, p. 000257). No other VOCs were detected in either sample. Metals were not detected in TCLP tests of the filter overspray (Mailing No. 1, pp. 000259, 000263) and filter cloth (Mailing No. 1, p. 000267).
- Non-hazardous waste oil generated from maintenance of the manufacturing equipment was stored in "closed top DOT approved drums in the outdoor storage building" which is located between the Maintenance building and the Boiler building (Mailing No. 3, p. 000005). The drums have been transported to Hukill Chemical Co., in Bedford, Ohio for incineration (Mailing No. 1, p. 000007). The outdoor storage building is a wooden structure with a concrete floor (Mailing No. 3, p. 000006).

- On the southeast perimeter of the Will & Baumer site, No. 6 fuel oil had been stored as a back-up fuel source in four aboveground storage tanks (ASTs) from the 1970s to the early 1980s, when the fuel was drained and removed (Mailing No. 1, p. 000289). It was noted that this back-up fuel oil had never been used as an energy source. On April 22, 1992, Will & Baumer closed and removed the ASTs. This required the removal of all remaining liquid, disposal of remaining solids or waste products, airing of the tanks to render them free of vapors, dismantling the tanks, and sending them to a scrap metal recycler. Approximately 13,000 gallons of remaining fuel oil were removed and transported to Cibro Petroleum in Albany, New York for recycling on June 3, 1992 (Mailing No. 1, p. 000284). On July 31, 1992, 25 drums of other tank-related waste (including rags, No. 6 fuel oil and tank bottoms, soil and No. 6 fuel oil, and No. 2 fuel oil) were also transported to Cibro Petroleum in Albany for recycling (Mailing No. 1, p. 000282). Prior to removal, the ASTs were registered with NYSDEC as a petroleum bulk storage area facility (Petroleum Bulk Storage No. 7-059099) (Mailing No. 1, p. 000290).
- During the decommissioning of the former No. 6 fuel oil aboveground storage facility (April 22, 1992), the presence of a dark petroleum-like substance was discovered on the southeast perimeter of the Will & Baumer site (Mailing No. 1, pp. 001616, 001636). This was determined to be soil contaminated by No. 6 fuel oil. The area of contamination was delineated by several test pits (as shown in Figure 4, herein), and determined to be approximately 20 ft x 20 ft x 0.5 ft (Mailing No. 1, pp. 001616 - 001619). This was reported to NYSDEC and assigned spill number 92-00872 (Mailing No. 1, p. 001636). The soils removed from the excavation were transported to Clean Berkshires Inc., in Pittsfield, Massachusetts for beneficial reuse as "asphalt paving base" by asphalt encapsulation (Mailing No. 1, p. 001619). According to a September 26, 1994 letter from NYSDEC, the spill was deemed

closed (Mailing No. 1, p. 001615). The spill and its remediation are further discussed in Section 4.1 herein.

- Asbestos was removed from several locations within the Will & Baumer facility. After removal, the asbestos was stored in bags in the basement of the Candle Plant until it was disposed at the Seneca Meadows Landfill in Seneca Falls, New York (Mailing No. 1, p. 000008, Mailing No. 3, p. 000006). Facility equipment which required asbestos removal included the pipe insulation in the basement and first through third floors of the Candle Plant, small wax tank insulation in the wax storage area, and boiler and piping insulation in the Powerhouse (Boiler building) (Mailing No. 2, pp. 002927 - 002928, and Figure 3 herein). The areas which contained asbestos, but where action was deferred, were the siding of the Candle Plant, and pipe insulation on the third floor of the Candle Plant and in the metal buildings, including the beeswax storage, beeswax bleaching, voltater, food service, glass product, and shipping and receiving buildings (Mailing No. 2, pp. 002925 - 002927). The removal and repair by encapsulation took place in February 1987 (Mailing No. 2, p. 002935). A NYS Department of Labor building inspector completed a walk-through and certified the area on July 20, 1992 (Mailing No. 2, pp. 002914 - 002920). It was concluded by CES, Will & Baumer's consultant, that the majority (as much as 90% to 95%) of asbestos containing materials had been removed, and those remaining did not constitute an exposure risk due to good condition and non-friable nature of the material, and its low accessibility. Follow-up removal was recommended, as there were minor quantities left on site, but there is no indication of any further action by Will & Baumer (Mailing No. 1, pp. 002919 - 002920).
- Parts cleaner solvent is used and stored in a 10-gallon capacity parts cleaning tank. The cleaner is a hazardous material, and is listed as waste combustible petroleum naphtha liquid (Mailing No. 1, pp. 001488 - 001501) and as waste combustible

mineral spirits liquid (Mailing No. 1, pp. 001502 - 001506) on the manifest. The spent solvents are removed from the cleaning tank quarterly by Safety Kleen Corporation in Syracuse, New York (Company ID 2013). The tank is located in the Maintenance building, which is a brick building with a concrete floor (Mailing No. 3, p. 000006).

- A degreasing tank, which was stored historically in the Maintenance building or in the Boiler building generated waste thinner (denoted "UN1263") and still bottom waste (Mailing No. 3, p. 000007). These hazardous wastes were removed from the parts cleaning and degreasing tank, and stored in steel drums in the Boiler building and an adjacent wooden storage building until disposed by Haz-O-Waste Corporation in Wampsville, NY. The tank was removed from service in the mid 1980s. The hazardous waste manifests provided describe the waste product as "burnable liquid" and "burnable solids" (Mailing No. 1, pp. 001510 - 001514). The date when the parts cleaning and degreasing tank was installed was not indicated by Will & Baumer, and they state the capacity of the tank is not known. A "degreaser tank" is described in a NYSDEC Hazardous Waste Disposal Questionnaire as yielding approximately 10 gallons of wastes biannually during cleaning, but it is not known if this is the same degreaser tank (Mailing No. 1, p. 001669).
- Still bottoms were stored in a closed 55-gallon open top drum in a steel flammable liquid storage cabinet in the Quonset building prior to disposal by Solvents & Petroleum in Syracuse, NY (Mailing No. 3, p. 000007). The hazardous waste still bottoms were described on hazardous waste manifests as "UN19936," which is a flammable liquid containing "Toluene, Isopropyl Alcohol, Acetone, Methyl Isobutyl Ketone, [and] Diacetone Alcohol" (Mailing No. 1, pp. 001517 - 001523, 001545 - 001554) and also as "waste still bottoms toluene flammable liquid UN1294" (Mailing No. 1, pp. 001524 - 001554). The process(es) which generated the still

bottoms was not indicated by Will & Baumer. An Annual Generator's Report dated February 28, 1986 indicates that a distillation unit for recovery of paint thinner had been purchased and installed (Mailing No. 1, p. 001660), and it is possible the still bottoms could be generated by this distillation process (Mailing No. 1, p. 001660).

- Laboratory waste was produced during the analytical testing of wax, and included wax, alcohol, potassium hydroxide and hydrochloric acid (Mailing No. 3, p. 000007). This hazardous waste was stored in a 5-gallon lab safety can in the laboratory located in the Candle Plant prior to disposal, at which time it was transferred to a steel drum in the Quonset building and disposed of with the still bottoms by Solvents & Petroleum. It is listed on the 1988 and 1989 manifests as "Waste Ethanol, Flammable Liquid UN 1170" (Mailing No. 1, pp. 001530 - 001531, 001536 - 001537), and does not appear to be separated from the waste still bottoms on the manifests for 1987 (Mailing No. 1, pp. 001540 - 001546).
- Hazardous hydraulic oil waste was stored in closed-top 55-gallon steel drums. This oil was tested for metals and polychlorinated biphenyls (PCBs), and exhibited high levels of lead (maximum detected value of 520 mg/kg) (Mailing No. 1, pp. 001574 - 001595). The only other detected metal was cadmium (maximum detected value of 6.5 mg/kg). PCBs were not detected in any samples (Mailing No. 1, pp. 001597 - 001612). The shipping manifests for this oil list it as "Hydraulic Oil - Lead" (Mailing No. 1, p. 001572).
- Unspecified flammable solids, 1,1,1-trichloroethane, and petroleum distillate were stored in 55-gallon steel drums prior to disposal at separate times by Solvents & Petroleum in Syracuse, NY (Mailing No. 1, p. 000010 and Mailing No. 3, p. 000007). Will & Baumer did not indicate the processes which generated these hazardous wastes. A NYSDEC Hazardous Waste Disposal Questionnaire dated July 31, 1986

states that trichloroethylene was also used at this facility in a degreaser tank (Mailing No. 1, p. 001669). The flammable solids were believed to have been stored in the Quonset building prior to disposal, and the 1,1,1-trichloroethane and petroleum distillate were believed to have been stored in the Boiler building prior to disposal. All three wastes were disposed of in separate containers as hazardous still bottoms (Mailing No. 1, pp. 001549 - 001554).

Facility Permits

The permitted releases originating on-site are for stormwater discharges to a drainage swale and then to Ley Creek, for sanitary and industrial waste streams discharged into the sanitary sewer system, and for air releases on-site. These permits are discussed below.

A NYSDEC State Pollutant Discharge Elimination System (SPDES) Storm Water General Permit was issued on May 6, 1994 (Mailing No 1, p. 001955). The permit was not included in Will & Baumer's mailing, and the dates of permit coverage are not known. The permit application which was included (Mailing No. 1, pp. 001956 - 001959) indicates that Ley Creek is the receiving water body. A cover letter was provided from Will & Baumer to NYSDEC which asks to be removed from consideration for an individual permit and be included in the general permit program. Also included was an application for a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Stormwater Associated with Industrial Activity dated October 1, 1992. The permit application refers to one outfall location that discharges stormwater into a drainage swale to Ley Creek (Mailing No. 1, pp. 001960 - 001968). It is possible that the stormwater discharge outfalls named in each permit application are the same. As the SPDES permit was not included, it is not known if there were any requirements for monitoring. Figure 3 shows several outfalls to the drainage swale, however, Will & Baumer stated this is an old map (1985) and the only current discharge to Ley Creek via the swale is Outfall 004 which discharges only stormwater

(Mailing No. 3, p. 000005). Also included was an October 11, 1980 letter from NYSDEC to Will & Baumer indicating that since a recycling system was implemented, a SPDES permit was not necessary (Mailing No. 1, p. 001929).

Will & Baumer provided several Industrial Wastewater Discharge Permits for discharge into the Onondaga County Department of Drainage and Sanitation (OCDDS) sewer system which were valid from June 26, 1991 through June 4, 1998, and from December 1, 1985 through December 1, 1990 (Permit No. 93, Mailing No. 1, pp. 001860 - 001934). The most recent OCDDS permit (June 7, 1994 through June 4, 1998) lists two discharge points at Sewer #2 and Sewer #3. Sewer #2 consists of sanitary wastewater, wastewater from bottle cleaning operations, boiler blowdown and pH neutralized boiler condensate, pH neutralized wastewater from the beeswax bleaching process, and wastewater from regeneration of water softeners (Mailing No. 1, p. 001863). Sewer #3 is strictly a sanitary discharge from two employee restroom facilities in the warehouse. Several self-monitoring reports and results from quarterly testing were submitted by Will & Baumer dating back to 1986 (Mailing No. 1, pp. 000324 - 001413). The most recent self-monitoring report included in the submittal was for January 1 through June 30, 1996 and included a four-day monitoring period from May 6, 1996 through May 9, 1996 (Mailing No. 1, pp. 001372 - 001414). The total amount of water discharged from Sewer #2 during the reporting period was 1,185,262 gallons (Mailing No. 1, p. 001387). Flow for the sampling period was estimated as less than 7,500 gallons per day (gpd). The estimation was necessary due to a broken water meter on the Will & Baumer property which could not be repaired efficiently due to a large volume of water filling the pit in which the meter was located. The discharge of the water once it is pumped from the pit is discussed in Section 4.1.

Will & Baumer currently holds NYSDEC Certificates to Operate an Air Contamination Source for six emission sources (00001 through 00006). A permit was included which was valid from September 14, 1995 through September 30, 2000. Source 00001 is discharged

from the outside paint spray booth where glass candle containers are coated with lacquer paints. It vents from the east corner of the Quonset building, and consists of acetone, diacetone alcohol, dioctyl phthalate, ethyl alcohol, glycol ether, isobutyl isobutylate, isopropyl alcohol, methyl alcohol, methyl ethyl ketone, methyl isobutyl ketone, n-butyl acetate, nitrocellulose, particulates, primary amyl acetate, toluene, and xylene. Source 00002 is discharged from single and multiple inside candle container spray paint booths, and vents from the west corner of the Quonset building (Mailing No. 1, pp. 002020 - 002026). Source 00002 consists of acetone, aliphatic naphtha, isopropyl alcohol, methyl ethyl ketone, mineral spirits, nitrocellulose, toluene, and xylene (Mailing No. 1, pp. 002081 - 002082). Source 00003 vents bleaching tanks, crude boil, and wash boil from the bleaching building, where possible pollutants such as phosphoric acid, potassium permanganate, and oxalic acid are used. It should be noted that while the permit lists all three sources, the emission point information was taken from applications for older permits. The application for source 00001 is dated December 22, 1993 (Mailing No. 1, pp. 002020 - 002026), source 00002 is dated April 12, 1990 (Mailing No. 1, pp. 002080 - 002101), and source 00003 is dated May 11, 1989 (Mailing No. 1, pp. 002163 - 002175).

While no permits were included in the mailing for emission points 00003, 00004, and 00006, an extension was granted to Will & Baumer on April 21, 1996 extending the permits through May 15, 2001 (Mailing No. 1, p. 002017). From permit applications included in the submittal, it is noted that sources 00003 (discussed above) and 00004 vent crude boil, wash boil, and bleaching tanks, where possible pollutants such as phosphoric acid, oxalic acid, and potassium permanganate are used (Mailing No. 1, pp. 002155 - 002163). A cover letter was included stating a certificate was issued for source 00004 which was valid from August 11, 1989 through May 1, 1995 (Mailing No. 1, p. 002047). Both sources 00003 and 00004 vent from the bleaching building. Source 00006 vents the paint and thinner storage room in the Quonset building. This room holds sealed paint, thinner, and still bottoms containers, and an open distillation apparatus. The distillation apparatus is in use for 6 hours every month,

and holds approximately 2 inches of distilled lacquer thinner when not in use (Mailing No. 1, pp. 002176 - 002208). A cover letter stating a certificate was issued to Will & Baumer which was valid from November 2, 1989 through May 1, 1995 was included in the submittal (Mailing No. 1, p. 002207).

Historically, Will & Baumer was permitted to release waste associated with burning waste paraffins within the boiler units (Mailing No. 1, pp. 002131 - 002138). These primary boiler units were converted to natural gas combustion at a scale which did not require a permit. The backup boiler was not exempt, and emission point 00005 was assigned to its intermittent exhaust (Mailing No. 1, pp. 002139 - 002163). It vents from the west side of the Boiler building. A cover letter stating a certificate was issued for this source that was valid from November 3, 1995 through October 31, 2000 was included in the submittal (Mailing No. 1, p. 002138).

3.0 POTENTIAL PATHWAYS FOR RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

3.1 Soil

Soil on the Will & Baumer site can be contaminated directly from spills from waste storage and handling areas, or from spills during the manufacturing process. A walk-through performed by C&S Engineers on May 27, 1992 noted the location of several wax spills on the grounds of Will & Baumer, but these spills were removed by the time a subsequent walk-through was conducted on November 9, 1992 (Mailing No. 2, pp. 002729 - 002734). In addition, several hazardous materials are noted as being transported from one building to another building, and being stored outside. These materials could be spilled during handling or storage, and subsequently contaminate the soil. Spill prevention measures for outdoor hazardous material and waste storage areas were not described by Will & Baumer in the documents reviewed. Spills can be carried to Ley Creek via runoff to the drainage swale which discharges all stormwater into Ley Creek (Mailing No. 1, pp. 001417 - 001473). Analytical soil data were not included in the documents reviewed. A summary of soil remediation is presented in Section 4 herein.

3.2 Surface Water

The Will & Baumer property is located less than 1,000 feet northeast of the eastern shore of Onondaga Lake, and approximately 1,300 feet northwest of Ley Creek. The facility is upgradient of both surface waters, and there is a drainage swale shown on the site map (Figure 3) which leads to Ley Creek. Preventative measures to limit possible runoff contamination from outdoor storage activities were not identified, with the exception of the lined berm which contained contaminated soil during remediation of a fuel oil spill in 1992. Will & Baumer currently hold a SPDES permit to discharge stormwater to Ley Creek via the

drainage swale, and this runoff could be a source of contamination to Ley Creek in the event of an on-site spill. Available stormwater data are summarized in Section 4 herein.

3.3 Groundwater

Groundwater beneath the Will & Baumer site can be contaminated by spills of hazardous wastes or production materials during handling, storage, or loading. Analytical data from the water in a closed reinjection well located near the Candle Plant are summarized in Section 4.1. These data generally indicate no contamination from pollutants which could be attributed to Will & Baumer operations (Mailing No. 1, p. 001453). Grassed areas would increase the likelihood for subsurface contamination, however, most of the area surrounding the buildings is impervious (Mailing No. 1, p. 001984). Other than two groundwater samples from test pits in the fuel oil spill area, Will & Baumer did not provide any additional groundwater data for this site.

3.4 Air

Air emissions are a local source of contaminants to the atmosphere with potential deposition to the ground surface and subsequent transport to Ley Creek via surface runoff. The air permits held by Will & Baumer were for volatile substances released during paint spraying operations (9 hours/day, 189 days/year) in the lower Quonset building (Mailing No. 1, pp. 002047 - 002058), and for a combustion source located in the Boiler building, which releases particulates, carbon monoxide, and nitrogen oxides during operation (24 hours/day, 300 days/year) (Mailing No. 1, pp. 002138 - 002144). The Phase I Environmental Site Assessment (November 1992) states that "C&S Engineers, Inc. evaluated Will & Baumer's air emission sources in terms of the current New York state guidelines and summarized the results in a letter dated March 19, 1992," however, this letter was not included in the company submittals (Mailing No. 2, p. 002740).

3.5 County Sewer System

Based on the most recent OCDDS permit (June 7, 1994 through June 4, 1998) provided by Will & Baumer, the company discharges sanitary wastewater, wastewater from bottle cleaning operations, boiler blowdown and pH neutralized boiler condensate, pH neutralized wastewater from the beeswax bleaching process, and wastewater from regeneration of water softeners (Mailing No. 1, p. 001863). Sewer #2 is the discharge point for all process waste streams while Sewer #3 is the sanitary wastewater discharge from the warehouse. Sewer #1 was not identified in the most recent permit. According to older permits, effluent from the bleach waste neutralization system was discharged through Sewer #4.

Several self-monitoring reports were submitted by Will & Baumer dating back to 1987. The most recent report included in the submittal was for January 1 through June 30, 1996 and included a four-day monitoring period from May 6, 1996 through May 9, 1996 (Mailing No. 1, pp. 001372 - 001414). Except for oil and grease and pH, Will & Baumer's discharges during this period were found to be below OCDDS permit limits. Violations of the permit are discussed in Section 4.1. Will & Baumer discharged 1,185,262 gallons of wastewater from Sewer #2 from January 1, 1996 through June 30, 1996 at an estimated daily flow rate of 7,500 gallons per day (Mailing No. 1, p. 001387).

The site map (Figure 3) shows the municipal sewer line along the northwest perimeter of the site. Sewer #2 is not shown on this map, however, from a map dated April 9, 1992 and included in the NOI for Application of SPDES permit for 1994 (Mailing No. 1, p. 001984), this sewer appears to be at the location of Manhole B adjacent to the Vassar building. Similarly, the warehouse sanitary sewer (Sewer #3) appears to be at the location of Manhole C (Mailing No. 1, pp. 001930 - 001933).

4.0 LIKELIHOOD OF RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

4.1 Documented Releases

Documented Spills

Will & Baumer indicated that on May 2, 1986 the company pleaded guilty to conspiring to illegally dispose of hazardous waste without having obtained a permit, to knowingly dispose of hazardous waste without a permit, and to knowingly store hazardous waste without a permit. This legal action refers to the illegal disposal of hazardous wastes from the beeswax bleaching process with a pH equal to or below 2.0 from November 19, 1980 until July 11, 1985 (Mailing No. 1, p. 000012), as well as conspiring to illegally dispose of beeswax bleaching process waste back to 1975 (Mailing No. 3, p. 000008). The solids from the bleaching process were settled out and the effluent was discharged directly to the drainage swale which flows to Ley Creek. Pollutants illegally discharged to Ley Creek include arsenic, chromium, lead, manganese, nickel, phosphoric acid, and phosphorus (Mailing No. 1, pp. 002342 - 002343). It was noted that "Will & Baumer is unable to estimate the quantity of waste illegally discharged over this period of time, other than the discharge was of a minimal amount done approximately once a week" (Mailing No. 3, p. 000008).

Will & Baumer plead guilty to all charges and was subsequently fined, placed on the USEPA's List of Violating Facilities, and began a three-year probationary period. During the probationary period, the company ceased all unpermitted discharges and instituted a pretreatment program for the beeswax bleaching process effluent before discharging it under permit to the sanitary sewer. In addition, hazardous materials which had been stored on-site were distilled and recycled. Will & Baumer hired an environmental consultant, and a new vice-president of operations who was also put in charge of environmental compliance, to

ensure the continuing compliance with environmental laws and regulations. The company was removed from USEPA's List of Violating Facilities on January 22, 1988, and a \$300,000 fine was remitted to Will & Baumer at the end of the probationary period (Mailing No. 1, p. 002333).

During the decommissioning of the former No. 6 fuel oil aboveground storage facility on April 22, 1992, the presence of a dark petroleum-like substance was discovered on the southeast perimeter of the Will & Baumer site. This was determined to be soil contaminated by No. 6 fuel oil. The area of contamination was delineated by several test pits, and determined to be approximately 20 ft x 20 ft x 0.5 ft (Mailing No. 1, p. 001616). The spill was reported to NYSDEC and assigned spill number 92-00872 (Mailing No. 1, p. 001636). The locations of the fuel oil storage facility and the test pits are shown in Figure 4 herein.

The soil in the area of the spill was removed and placed in a bermed and lined containment area and covered with polyethylene sheeting. NYSDEC requested a series of test pit excavations along the perimeter of the main removal area and along the eastern fence line of the Will & Baumer property. The limited data from the test pits (three samples) resulted in non-detects of select VOCs and SVOCs with the exception of a "water and unknown product" sample from a hand excavation pit which had detections of acenaphthene (370 mg/kg), benzene (0.79 mg/kg), fluorene (530 mg/kg), naphthalene (1,200 mg/kg), phenanthrene (890 mg/kg), toluene (4.4 mg/kg), and total xylenes (4.5 mg/kg). The sample tested positive for total petroleum hydrocarbons and was identified as fuel oil (Mailing No. 1, pp. 001626 - 001627). It should be noted that the lab report for this sample (No. 13343) presents the analytical data for the hand-excavation pit sample with mg/kg as the unit of measurement (Mailing No. 1, pp. 001626 - 001627), however, according to the chain-of-custody form, this sample is listed as a water sample (Mailing No. 1, p. 001628). If the correct units are µg/L, then the detected concentrations of many compounds exceed the

NYSDEC Class GA groundwater standards, including acenaphthene, fluorene, naphthalene and phenanthrene.

Soils north and south of the primary removal area did not exhibit fuel oil-like odors, while soils to the west and east did exhibit a fuel oil-like odor (Mailing No. 1, p. 001617). Pits excavated along the eastern fence line of the property did not exhibit any physical or visual evidence of fuel oil contamination.

Due to the presence of an oil sheen in the area of the April 1992 soil excavation (test pits TP-1 and TP-3), approximately 75 cubic yards of additional soil were removed on August 3, 1992, as shown on Figure 4. This excavated soil, which exhibited a fuel oil-like odor, was placed in a bermed and lined area and covered with polyethylene sheeting. After an on-site meeting with NYSDEC, Will & Baumer backfilled the eastern portion of the excavated area, and left the excavation site open in order to observe the fuel oil sheen for any change. A roof structure was erected over the open pit and was maintained until November 2, 1992, when NYSDEC visited the site and determined the sheen to be decreasing. Although water in the western portion of the pit was observed to have a slight sheen, the remaining excavated area was backfilled with no requirements for additional analysis or remediation (Mailing No. 1, p. 001618). Approximately 70 tons of the excavated soil were removed from the containment area in January 1993 and May 1993 and were transported to the Clean Berkshires facility in Massachusetts for recycling into an asphalt paving base by asphalt encapsulation (Mailing No. 1, p. 001619). The spill was deemed closed by NYSDEC on September 26, 1994 (Mailing No. 1, p. 001615). It is believed that groundwater monitoring wells were not installed on-site as a result of this or other spills.

Will & Baumer included several Notices of Violations (NOVs) of the facility's OCDDs permits dating back to 1986. NOVs which occurred after 1991 are presented in Table 2. Will & Baumer has historically had elevated oil and grease concentrations in their waste

Table 2: Violations of OCDDS Effluent Limits (1991 - 1996)

Parameter	Date of Violation	Effluent Limit	Measured Value	Notes
Oil and Grease	11/7/91	150 mg/L	369 mg/L	
Oil and Grease	9/9/92	150 mg/L	273 mg/L	
Oil and Grease	9/10/92	150 mg/L	9,387 mg/L	
Oil and Grease	9/10/92	150 mg/L	9,500 mg/L	
Oil and Grease	11/5/92	150 mg/L	No data provided	Low-flow condition
pH	12/20/93	5.5 - 9.5	10.9	
Oil and Grease	10/18/94	150 mg/L	169 mg/L	Resulting from wax spill on 2/11/94
Oil and Grease	10/20/94	150 mg/L	213 mg/L	
Oil and Grease	5/6/96	150 mg/L	324 mg/L	Samples taken during low-flow condition
Oil and Grease	5/7/96	150 mg/L	243 mg/L	

Source: Will & Baumer, Mailing No. 1, pp. 002210 - 002264, 002269 - 002294.

Notes: These discharge limitations are based on instantaneous measurements obtained by grab samples, as opposed to daily composite samples.

streams due to the nature of their manufacturing materials, i.e., beeswax and paraffin. In their submittal they note the standard analysis procedure for oil and grease (Oil and Grease Partition - Gravimetric Method) will identify fats and waxes as oil and grease (Mailing No. 1, p. 002314). They inquired if OCDDS is more concerned with hydrocarbons and fats or with total oil and grease, but a response to this question was not available for review. Semi-annual wastewater monitoring reports were provided by Will & Baumer dating back to 1988, and quarterly self-monitoring reports were provided dating back to 1986. These reports indicated additional oil and grease violations with a maximum value of 11,000 mg/L on May 15, 1986 compared to 150 mg/L effluent limit (Mailing No. 1, p. 000327) as well as BOD₅ violations (maximum concentration 2,930 mg/L on June 15, 1987 compared to 300 mg/L effluent limit, Mailing No. 1, p. 000351) and phosphorus violations (maximum concentration of 99 mg/L on June 15, 1987 compared to 10 mg/L effluent limit, Mailing No. 1, p. 000351). The BOD₅ and phosphorus violations are acknowledged as a “problem area,” and in a letter

to OCDDS dated July 22, 1987, Will & Baumer attribute these violations to the intrusion of non-contact cooling water into the sewer, as well as stagnant conditions and the buildup of waste solids due to flow problems resulting from sewer elevations (Mailing No. 1, pp. 000248 - 000349).

Other releases to the sanitary sewer, as documented in Will & Baumer's mailings, are summarized below.

- On February 11, 1994, there was a food-grade paraffin wax release at the Will & Baumer facility which resulted from an open tank valve in the Quonset building. This resulted in approximately 375 gallons of paraffin wax that flowed out of the Quonset building, down a paved ramp and into the Extrusion building cellar, and then into a sump pit from which contact cooling water was pumped into the sanitary sewer. Will & Baumer discovered the spill, and inspected the sump pump. As it was clean and free of wax it was believed the wax was contained by the sump pit. Following this discharge, wax was discovered in the Ley Creek Pump Station that afternoon and Will & Baumer were contacted by OCDDS. The wax spilled at the Will & Baumer facility was cleaned up, and in the process it was noted there were approximately 375 gallons of wax missing, and presumed discharged to the sewer system (Mailing No. 1, p. 002265). It is not clear from the mailing what action was taken by the OCDDS, nor if any other remediation measures were required of Will & Baumer. A stipulation that was agreed upon by the OCDDS and Will & Baumer was included in the mailing, but appears to refer to pH, and not a release of wax to the sewer system (Mailing No. 1, p. 002259).

Several steps were taken in 1994 to prevent a recurrence of a large discharge to the sanitary sewer system. The sump pump was removed and the contact cooling water which had been discharged to the sewer by that sump pump was recirculated in a

closed-loop system. Will & Baumer instituted procedural changes for the filling of tanks in the facility, and the tanks in the Quonset building were to be “bermed with a containment barrier in order to contain 110% of the largest tank in that area” (Mailing No. 1, p. 002266).

There were major surcharge conditions within the sewer following the wax release which resulted in elevated oil and grease levels exceeding the OCDDS standards in October 1994. Will & Baumer attempted to clean the sewer system by flushing it with water, but this only temporarily alleviated the surcharge condition. Floatable solids such as wax continued to stagnate in the sampling zone of Sewer # 2. Will & Baumer then power jetted the sewer line, which seemed to remove the wax blockage and reduce the surcharge conditions. The excess wax was believed by Will & Baumer to have impacted the sewer sampling in October 1994 (Mailing No. 1, pp. 002251 - 002253).

- As mentioned in Section 2.3, a sump pit containing a water meter was filled with water that needed to be removed. The City of Syracuse sent Will & Baumer a letter dated June 19, 1989 stating the water usage at the property had been estimated since December 16, 1988 (Mailing No. 1, p. 001485). In order to read the meter, the pit needed to be drained, and the water from the pit was released to the sanitary sewer system. Prior to release, the water was tested for PCBs, VOCs, and certain SVOCs with no detections (Mailing No. 1, pp. 001478 - 001479). OCDDS was alerted to the discharge and on December 1, 1989, 3,854 gallons of wastewater were pumped from the “city water pit located in the parking lot of [the Will & Baumer] facility” to the Boiler house and discharged into the sanitary sewer (Mailing No. 1, pp. 001476 - 001477).

- Historically, Will & Baumer used on-site groundwater for non-contact cooling water for candle molding machines, and reinjected the water back into the well. The well, which acted as a water supply and holding basin, was approximately 32 feet deep with a diameter of 8 feet, and the water surface was at 6 feet below ground level (Mailing No. 1, pp. 001428, 001435 - 001437, Mailing No. 2, p. 002763). A SPDES permit was not necessary for this action, as it was deemed a recycled system with no discharge to State waters (Mailing No. 1, p. 001444). Will & Baumer discontinued use of the well to avoid future regulatory concerns and to eliminate the resulting mineral deposition to the factory water lines and molding machines (Mailing No. 1, p. 001429). After discussion with USEPA and NYSDEC, Will & Baumer tested the water, pumped the well, capped the bottom with concrete, re-pumped the well, filled it with sand, and welded on a cover (Mailing No. 1, pp. 001418 - 001419). A total of 80,074.5 gallons of water were pumped into the sanitary sewer in November 1988 (Mailing No. 1, pp. 001425 - 001426). The analysis of this water showed non-detects for most inorganics, with the exception of calcium (99 mg/L), iron (0.19 mg/L), magnesium (11 mg/L), manganese (0.06 mg/L), sodium (140 mg/L), and strontium (2.3 mg/L), and non-detects for VOCs. Chloride and sulfur were also detected (up to 2,020 mg/L and 940 mg/L, respectively), and the pH of the water ranged from 7.5 to 7.8 (Mailing No. 1, pp. 001462 - 001473). Will & Baumer stated that “to the best of [their] knowledge there has been no spillage of oil, gas, and/or solvent materials into this well” (Mailing No. 1, p. 001422).
- After the beeswax bleaching process, the wastewater discharges from the bleaching operations are collected via a floor conveyance system and pumped into a 500-gallon capacity poly tank. When the tank is full, it is mixed and tested for pH prior to discharge. If neutralization is required, magnesium hydroxide is used and then the solution is discharged to the OCDDS sewer system (Mailing No. 3, p. 000011). It was noted that “prior to the use of magnesium hydroxide,” sodium hydroxide was

used for neutralization (Mailing No. 3, p. 000011). Prior to 1985, Will & Baumer stated that the solids were settled from the tank prior to release to the vegetated drainage swale rather than to the sanitary sewer. The settling step was discontinued in 1985 after the neutralization process was designed and implemented and the effluent was rerouted to the sanitary sewer system (Mailing No. 3, p. 000010). A letter to NYSDEC dated July 31, 1986 notes that "EP Toxicity tests are being conducted on the sludges resulting from the beeswax bleaching process. Process knowledge indicates that no hazardous constituents are expected to be present" (Mailing No. 1, p. 001664). An analysis of the sludge from the crude tank (the first step of bleaching before addition of chemicals) and the bleach tank liquid was included in the submittal. Will & Baumer stated that the sludge is not considered to be "corrosive or toxic in any way," and that the liquid contains no toxic elements (Mailing No. 1, pp. 001670 - 001672). The samples were noted to contain "an abundance of beeswax, clay, some fibers, and phosphoric acid," as well as some dirt and honey. Major elements in the samples include aluminum, calcium, phosphorus, silicon, and sodium. Will & Baumer indicated that sludge from the pretreatment prior to 1985 was managed as industrial waste and disposed off-site (Mailing No. 3, p. 000010).

Will & Baumer included in their first submittal a letter dated December 22, 1992 to OCDDS stating "a letter describing modifications to the Bleach House pretreatment process will be forthcoming," however, this letter was not available for review (Mailing No. 1, p. 002269). This modification possibly refers to the change from using sodium hydroxide to magnesium hydroxide, which was noted in Mailing No. 3 (p. 000011) and was approved by OCDDS on June 5, 1995 (Mailing No. 1, p. 001792). It might also be referring to the ongoing reduction of oxalic acid and phosphoric acid from the bleaching process to neutralize pH, as noted in a "Generator Annual Report" dated February 23, 1988 (Mailing No. 1, pp. 001650 - 001651). In

a letter to OCDDS dated January 22, 1990, Will & Baumer discuss methods to reduce the fluctuation in loadings of BOD₅, phosphorus and solids which occur due to batch discharges of the Bleach House wastes. Will & Baumer stated that the methods under consideration would “reduce variations in conventional pollutant loadings” by equalizing flow, discontinuing the use of phosphoric acids, and using alternative non-chemical bleaching techniques (Mailing No. 1, p. 001684).

Ongoing/Recent Releases

As previously discussed, ongoing releases from the site include the discharge of industrial and sanitary wastewaters into the OCDDS sanitary sewer system, discharge of stormwater to Ley Creek via the drainage swale, and permitted air emissions. Data on releases to the sanitary sewer system are presented in Section 4.1 and information on air emissions are presented in Sections 2.3 and 3.4.

Will & Baumer discharges stormwater collected from roof drains and catch basin runoff to Ley Creek via the drainage swale under a SPDES general permit as discussed in Sections 1.4, 2.3, and 3.2 (Mailing No. 1, pp. 001955 - 001959, Mailing No. 2, p. 002739). Will & Baumer sampled the effluent during dry weather and wet weather flows in October 1991, and the results are summarized and compared to NYSDEC ambient water quality standards for Class C waters in Table 3 herein. The original SPDES permit and discharge limitations, if any, were not included in the documents available for review. Exceedances of the receiving water quality standards for aluminum, total copper, iron, and total zinc are noted.

Table 3: Stormwater Data and NYSDEC Receiving Water Standards

Parameter	Dry Weather Conditions - October 1, 1991	Wet Weather Conditions - Grab Sample October 10, 1991	Wet Weather Conditions - Composite October 10, 1991	NYSDEC Class C Water Standards
Biochemical Oxygen Demand (mg/L)	1.65	1.05	0.8	--
Chemical Oxygen Demand (mg/L)	26	36	21	--
Color	<5.0	<5.0	<5.0	<15.0
Surfactants (mg/L)	1.44	0.48	0.08	--
Oil & Grease (mg/L)	8.6	13.2	7.8	--
pH	7.30	7.40	7.61	6.5 - 8.5
Total Phosphate (mg/L)	0.05	<0.04	0.08	--
Total Suspended Solids (mg/L)	16	15	1.0	--
Total Kjeldahl Nitrogen (mg/L)	0.29	0.64	0.55	--
Nitrate/Nitrite (mg/L)	1.83	1.85	1.27	--
Total Aluminum (mg/L)	<0.20	0.24	0.30	0.1
Total Copper (mg/L)	<0.020	0.030	0.023	0.009 ¹
Total Iron (mg/L)	0.26	0.31	0.23	0.3
Total Magnesium (mg/L)	56	49	30	--
Total Tin (mg/L)	<1.0	<1.0	<1.0	--
Total Zinc (mg/L)	0.14	0.128	0.479	0.083 ¹

Sources:

Data are obtained from Will & Baumer Mailing No. 2, pp. 002751 - 002756.

NYSDEC Water Quality Standards are obtained from NYS Title 6 Part 703, Class C standards.

Notes:

1. Assumes a hardness of 100 ppm for aquatic, chronic standards.
2. Exceedances of Class C standards are shown in bold (detections only).

4.2 Threat of Release to the Lake System

4.2.1 Extent of Site Contamination

Based on the documents reviewed, with the exception of the fuel oil spill east of the Boiler building and west of the drainage swale, there was no indication of site contamination at the Will & Baumer facility. However, only limited soil, groundwater, and surface water data were provided, as discussed below.

Soil

Soil sampling data were not available for review for areas other than the location of the fuel oil spill (although it is believed that the results for the one sample reported with soil units [mg/kg] was actually a water and product sample from a test pit). The candle manufacturing process takes place indoors, and is not likely to have resulted in significant soil contamination. C&S Engineers reported that there are no underground storage tanks present at the site and that the gasoline tank, the four aboveground fuel oil tanks, and a phosphoric acid tank have since been removed or closed (Mailing No. 2, pp. 002740 - 002741). Contaminated soil resulting from a fuel oil spill was excavated in 1993 and disposed off-site (see Section 4.1).

Groundwater

Groundwater data were available for review for only the reinjection well which has since been closed and two water samples collected from test pits near the fuel oil spill. Data from the reinjection well, summarized in Section 4.1, indicate that VOCs and most inorganics were not detected. However, it is believed that this well, which was located near the Candle Plant, was upgradient of the fuel oil spill. A sample of water and product collected during soil excavations in the fuel spill area indicates that groundwater was impacted in this area.

Soil from this area was excavated and disposed off-site. Water from test pits located outside of the excavation area (TP-2 and TP-7, see Figure 4) did not exhibit any detections of select VOCs, including benzene, chlorobenzene, ethylbenzene, toluene, and xylenes. However, a “slight sheen” was observed by Will & Baumer and NYSDEC in groundwater in the excavation pit. According to C&S Engineers, “it was resolved during the meeting that the presence of the sheen did not pose a significant threat to the environment, and the Department agreed that the remaining excavated area could be backfilled with no requirements for additional analysis and/or remediation” (Mailing No. 1, p. 001618). It is believed that no additional groundwater data were subsequently collected and that there are no on-site wells to monitor the extent of groundwater contamination.

Surface Water and Sediment

A SPDES general permit was issued for the discharge of stormwater through one outfall into a drainage swale that flows to Ley Creek. Historically, as many as four outfalls were identified as discharging into the drainage swale (see Figure 3). It is believed that some process wastewater, including the beeswax bleaching process, was discharged to the drainage swale prior to 1985 (Mailing No. 3, p. 000008), and it is unknown what other processes have discharged to the swale through these outfalls. Stormwater data are presented in Table 3 in Section 4.1 herein.

Ley Creek was sampled in 1996 and 1997 as part of the NYSDEC Onondaga Lake NPL site investigation. Surface sediment samples were collected in Ley Creek near the Will & Baumer site on November 6, 1996. Sample L-3 was collected where 7th North Street crosses Ley Creek, sample L-2 was collected approximately 100 feet upstream of I-81 and approximately 5,000 feet downstream from sample L-3, and samples L-1A and L-1B (composited into sample L-1) were collected approximately 100 feet upstream of the Conrail Bridge, approximately 200 feet from the mouth of Ley Creek. Will & Baumer stated that they do not know where the drainage swale joins Ley Creek (Mailing No. 3, p. 000009),

however, the location of the swale appears to be just upstream of sample L-2, based on surface contours and a sketched field map provided by NYSDEC. Sample L-2, believed to be at the approximate location of the drainage swale from Will & Baumer, did not exhibit some contaminants (such as xylene, SVOCs, and PCBs) present at the downstream station L-1 and the upstream station L-3. PCBs were present at two of these three surface sediment stations (L-1 and L-3, but not L-2), and, similarly, heavy metals were detected at concentrations greater than NYSDEC Lowest Effect Levels (LEL) at stations L-1 and L-3, but not L-2. Concentrations of metals at these stations did not exceed NYSDEC Severe Effect Levels (SEL) (NYSDEC, 1997, pp. 9 - 11). Surface water or sediment sampling data from the drainage swale on or adjacent to the Will & Baumer property were not included in the documents reviewed.

Sewer Discharges

As stated in Section 2.3, sanitary wastewater, non-contact cooling water, and treated bleach wastewater are discharged to the OCDDS sewer system. OCDDS NOV's were provided from 1991 through 1996 and are summarized in Table 2 in Section 4.1. Violations during this period were limited to pH and oil and grease.

4.2.2 Migration Potential of Contaminants

Will & Baumer operations have resulted in the release of elevated levels of oil and grease and levels of pH outside of the acceptable range in discharges to the sanitary sewer system. These contaminants have limited potential to reach the Onondaga Lake system due to commingling with other waste streams in the system and subsequent treatment at the municipal treatment plant. Stormwater flows to Ley Creek via the drainage swale under a SPDES general permit, and is a possible source of contaminants to the Onondaga Lake system. Historic spills have impacted site soils and groundwater. Contaminated soil has been excavated under NYSDEC oversight. According to a September 26, 1994 letter from

NYSDEC to C&S Engineers, Will & Baumer's consultant, "the Department deems no [further] remediation is contemplated or required at this time" (Mailing No. 1, p. 001615). Also, it is believed that groundwater monitoring and/or remediation were not conducted on site by Will & Baumer. According to C&S Engineer's Phase I Environmental Audit (November 1992), "an assessment of the groundwater quality would require a series of groundwater monitoring wells to be installed and then analyzed for standards prescribed under 6 NYCRR Section 703.5. However, information gathered during this effort at the subject parcel, including the first and second walkovers, and responses from individuals and agencies identified in this report, in our opinion does not warrant such additional investigations at the Will & Baumer property" (Mailing No. 2, p. 002742). It is not known if NYSDEC has concurred that additional investigations are not warranted.

5.0 POTENTIAL FOR ADVERSE IMPACTS TO LAKE SYSTEM DUE TO A RELEASE OR THREAT OF A RELEASE

5.1 Hazardous Substance Characteristics

Based on the information provided, wastes generated during Will & Baumer operations are primarily industrial wastes, with some hazardous wastes resulting from painting, cleaning, and distillation activities. Generated wastes are shown in Table 1. The storage areas on the Will & Baumer facility are primarily in buildings (Mailing No. 3, pp. 000004 - 000005), with the exception of outdoor aboveground storage tanks which have been removed. Soil contaminated from a fuel oil spill in the vicinity of the tanks was excavated and disposed off-site. NYSDEC indicated in 1994 that no additional remediation was required at that time. Thus, characteristics of contaminants of concern are not discussed herein.

5.2 Quantity of Substances

Since 1985, Will & Baumer has generated an average of 375 gallons per year of hazardous wastes (parts cleaner, still bottoms, laboratory waste, and waste oil; see Table 1) which have been recycled at facilities located within Syracuse, New York. From 1980 to 1985, an average of 23 55-gallon drums (approximately 1,250 gallons) of hazardous waste were disposed of per year at Haz-O-Waste Corporation in Wampsville, NY, a facility within a 50-mile radius of Onondaga Lake (Mailing No. 1, pp. 000009 - 000010). It is not indicated in Will & Baumer's submittal how hazardous wastes were disposed of, if generated, prior to 1980.

Industrial wastes generated by Will & Baumer include paint filters, waste oils, and general office rubbish. With the exception of paint filters and non-hazardous waste oil, industrial waste is disposed of at OCRRA in Syracuse, New York (Mailing No. 1, p. 000006). Paint filters and non-hazardous waste oil are disposed of at facilities outside of a 50-mile radius

of Onondaga Lake (Mailing No. 1, pp. 000007 - 000008). Prior to 1985, solids settled from the bleaching process effluent were disposed of as industrial waste, however, the quantity of these solids and their composition were not indicated in the Will & Baumer submittal (Mailing No. 3, p. 000010). Industrial wastewater has been discharged to the OCDDS sewer system. Oil and grease were detected at concentrations greater than the OCDDS permit limits from 1991 to 1996 (see Table 2), and possibly for a longer period. Assuming an average wastewater flow of 4,635 gallons per day (average of flow reported in the semi-annual monitoring report for the period of May 3 through May 6, 1993, Mailing No. 1, p. 001056) and a detected concentration of oil and grease of 369 mg/L (maximum value in Table 2, disregarding the extreme values of 9,500 mg/L and 9,387 mg/L caused by an isolated wax spill in September 1992), loadings of oil and grease to the sewer system can be estimated at approximately 14.3 lb/day. Utilizing the maximum oil and grease concentration shown in Table 2 (9,500 mg/L) along with the average flow, a maximum estimate of the loading would be 367 lb/day.

5.3 Levels of Contaminants

A discussion of the extent of on-site contamination, based on the material provided, is included in Section 4. Will & Baumer provided analytical data in their three mailings for soil and water samples from three pits in the fuel spill area on the southeast perimeter of the site, and data from several four-day wastewater sampling events in Sewer # 2 and Sewer # 4 prior to discharge to the OCDDS system. One of the excavation pits in the fuel spill area contained elevated levels of VOCs and SVOCs (see Section 4.1). Contaminated soils in this area were excavated and disposed off-site. Concentrations of most parameters in the wastewater samples were found to be within OCDDS permit limits with the exception of pH and oil and grease. NOV's are summarized in Table 2 and in Section 4.1.

5.4 Impacts on Special Status Areas

The Will & Baumer site is situated in an area where direct adverse impact to regulated wetlands is possible. Ley Creek, which is a Class C waterbody (6 NYCRR Part 895.4) near the Will & Baumer site, is located approximately 1,300 feet east of the facility.

According to the Syracuse West National Wetlands Inventory map (USDOI, 1978), a federal wetland exists approximately 800 feet south of the Will & Baumer facility near the mouth of Ley Creek and is designated as PEM1Cs (Palustrine, Emergent, Persistent, Seasonal Spoil) and another exists approximately 800 feet west of the site and is designated POWzh (Palustrine, Open Water). A New York State freshwater wetland designated SYW 11 is located 200 feet east and downgradient of the Will & Baumer site. This wetland area is located within the flow path of Ley Creek. Although not shown to scale on the submitted site map, based on surface contours (see Figure 2), it is likely that the drainage swale which flows from the Will & Baumer site to Ley Creek flows through this wetland area. State wetland SYW 12 is also downstream of the site, near the mouth of Ley Creek.

As of August 1996, the New York State "Natural Heritage Sensitive Element" nearest to the Will & Baumer facility was located approximately 1,500 feet west of the site, near the shore of Onondaga Lake. It is likely that this area would not be affected by contamination from the Will & Baumer site, as this element is separated from the facility by Onondaga Lake Parkway and Old Liverpool Road, and runoff from the site is likely to flow to the east, not the west.

Surface water and groundwater contamination from the site could adversely affect Ley Creek and the adjacent wetlands. Surface water or sediment sampling data from the drainage swale that flows into Ley Creek were not included in the documents reviewed. Only limited (three samples) soil/groundwater data associated with the fuel spill were provided. The extent of on-site soil and groundwater contamination is not known. The information provided by Will

& Baumer suggests that there is currently no off-site contamination from their operations, although disposal of process wastewaters directly to the drainage swale was a likely historic source of contamination to off-site waters.

6.0 SUMMARY OF CONCERNS

Based on the data and information provided by Will & Baumer, the following concerns are identified:

- Will & Baumer historically disposed of untreated beeswax bleaching process effluent directly to Ley Creek via the drainage swale. USEPA indicates that materials such as phosphoric acid, arsenic, lead, chromium, phosphorus, nickel, and manganese were the pollutants discharged. Will & Baumer did not include any information stating what processes would have generated these contaminants, the quantities of these contaminants, duration of disposal, or the impact on Ley Creek.
- A site map included in the submittal (Mailing No. 1, p. 001933, see Figure 3) shows four outfalls that discharge to the drainage swale that flows to Ley Creek. These outfalls are not described in the submittals, and it is not known what was historically discharged to Ley Creek via the drainage swale.
- A description of hazardous wastes which were generated and disposed of prior to 1980 was not included in the submittal. It is not known if these wastes were transported off-site for disposal, disposed on-site, or discharged to the drainage swale prior to 1980.
- The vegetated drainage swale is not marked to scale and its confluence with Ley Creek is not shown on any maps submitted by Will & Baumer. The swale appears to flow close to the location of the demolished fuel tanks (see Figure 3). It is possible that the historic fuel spill in this area impacted the swale, and runoff from the site could have impacted the swale and Ley Creek.

- Although a September 1994 letter from NYSDEC states that the Department deems that no further soil remediation was necessary at that time following the fuel oil spill and subsequent soil excavation, it is not known if NYSDEC concurred with Will & Baumer that groundwater remediation and groundwater monitoring would not be required.

REFERENCES

NYSDEC. Onondaga Lake NPL Site Tributary Sampling, First Round Report, Onondaga Lake NPL Site Remedial Program. October 1997.

NYSDEC. Onondaga Lake Project - 104(c) Reviews. Request for Supplemental Information, Letter to Will & Baumer, July 26, 2000.

Rickard, L.V. and D.W. Fischer. Geologic Map of New York, Finger Lakes Sheet (1:250,000). New York State Museum and Science Service Map and Chart Series Number 15. 1970.

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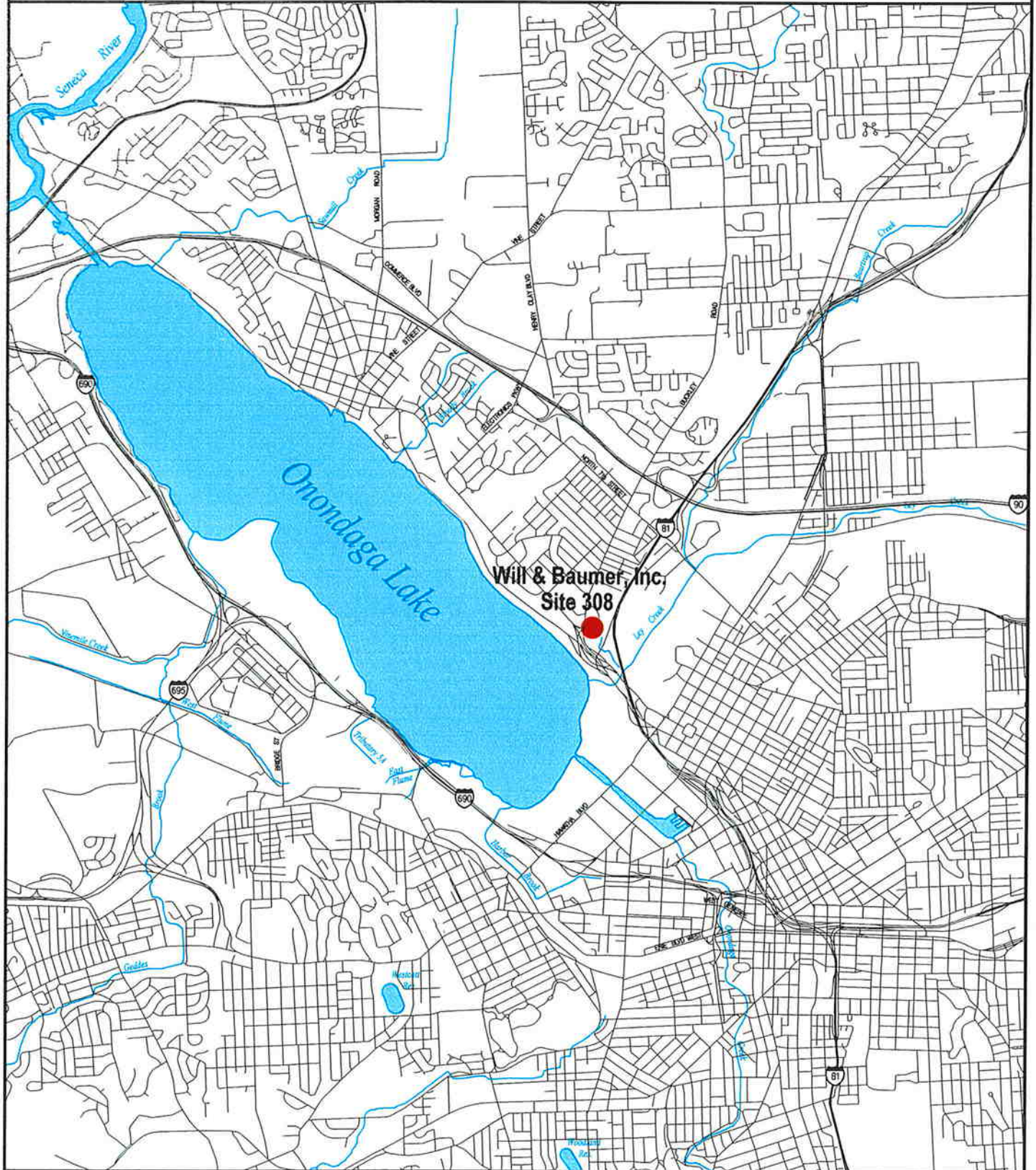
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Will & Baumer. Mailing No. 1: Response to Request for Information. November 13, 1996.

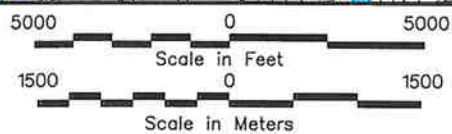
Will & Baumer. Mailing No. 2: Supplemental Response to Request for Information. April 7, 1997.

Will & Baumer. Mailing No. 3: Supplemental Response to Request for Information. September 28, 2000.

Site Location: Will & Baumer, Inc.



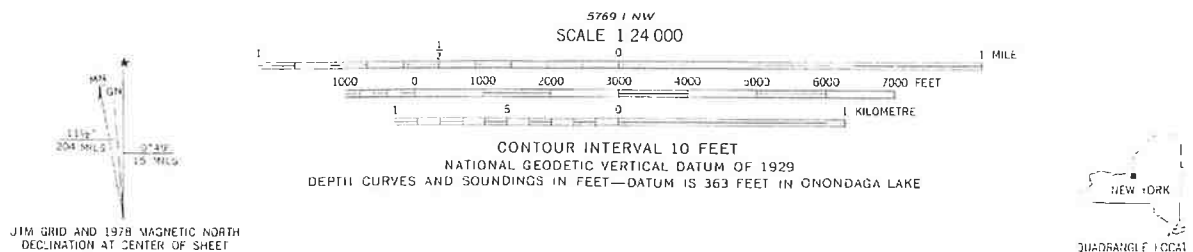
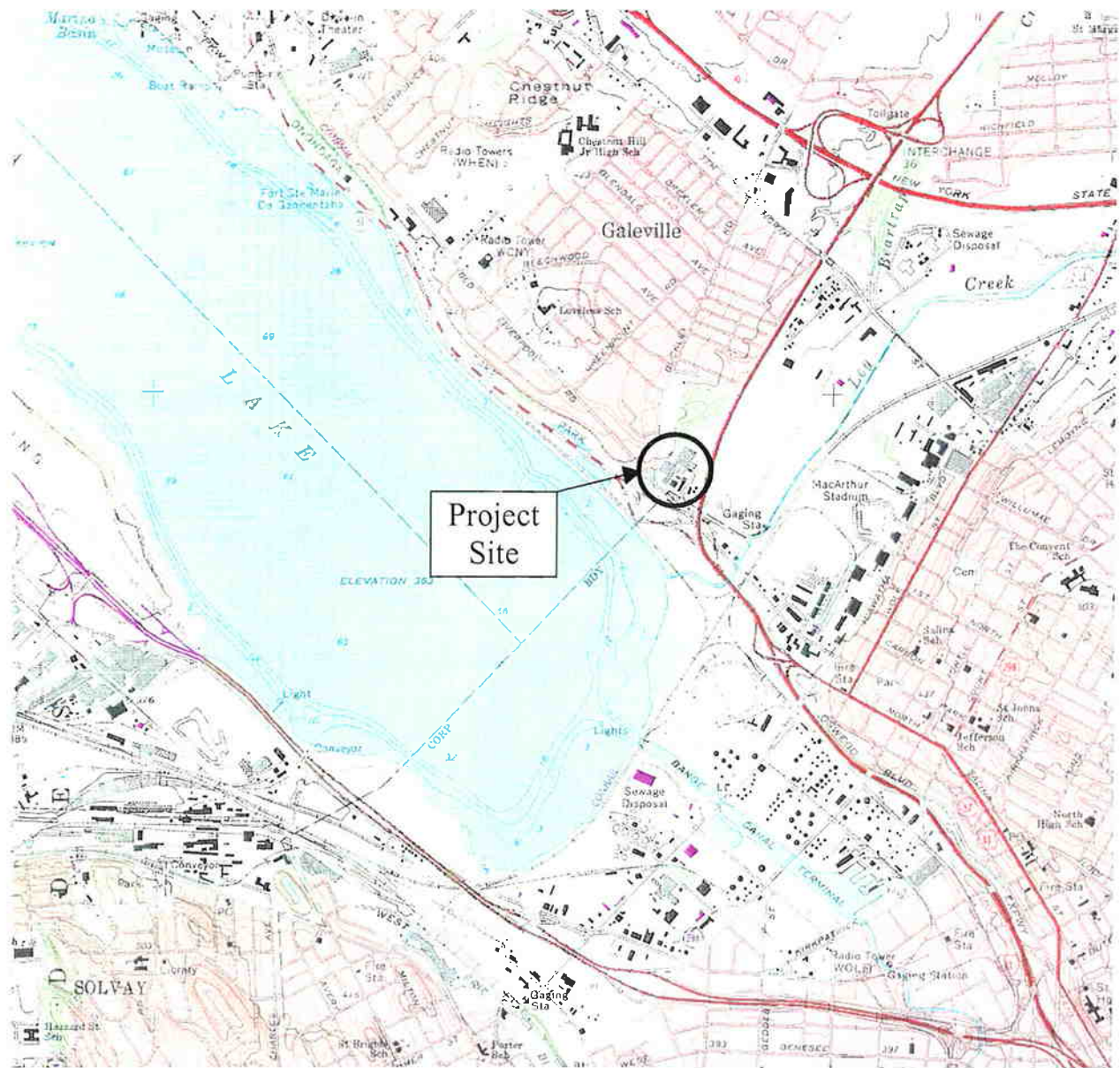
● Site Location



TAMS



Figure 1



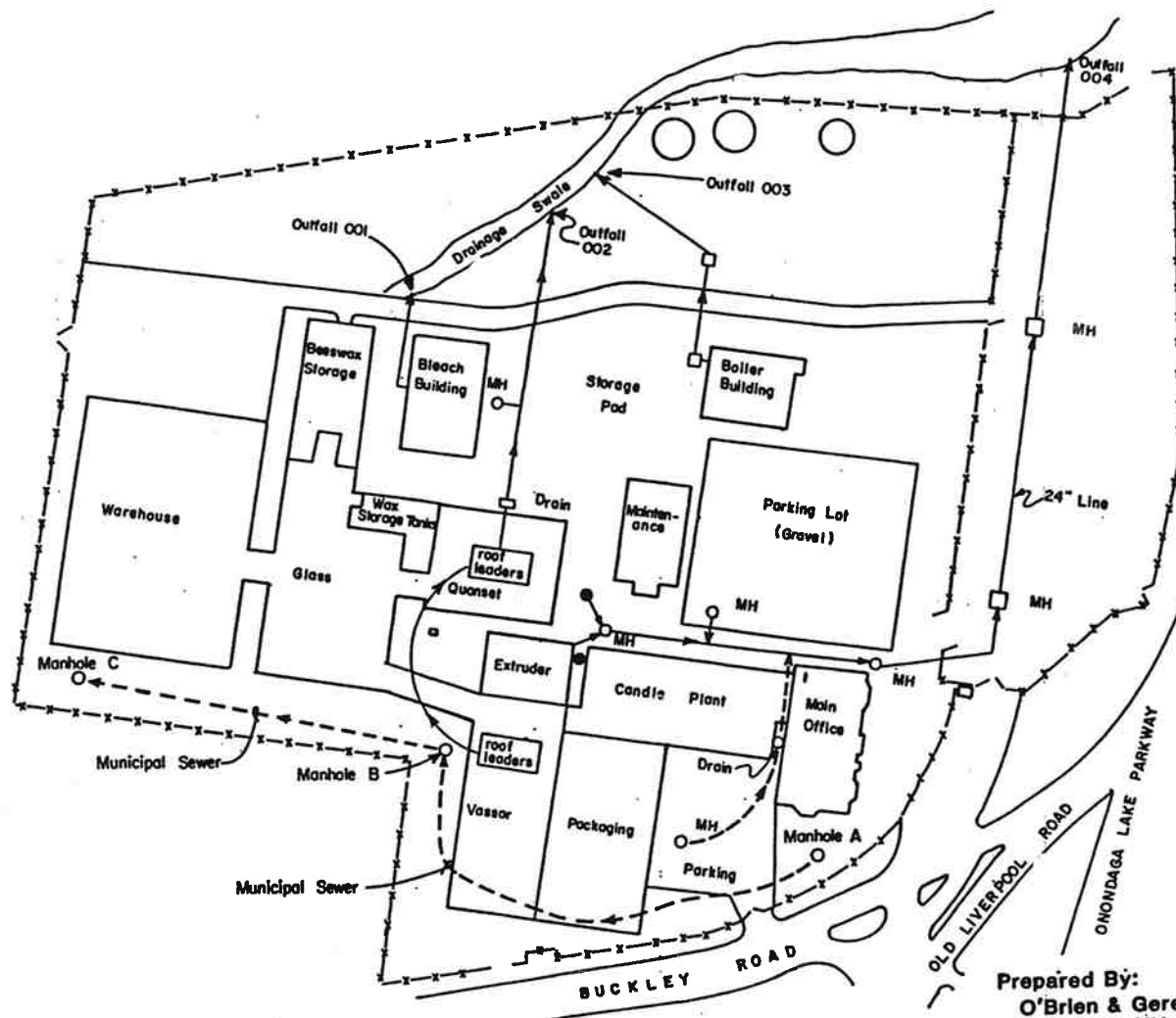
TAMS

United States Geological Survey
Syracuse West Quadrangle
Onondaga County, New York

Figure 2
Will & Baumer Facility

**WILL & BAUMER, INC.
OLD LIVERPOOL ROAD
SYRACUSE, NY**

x-x-x FENCE LINE

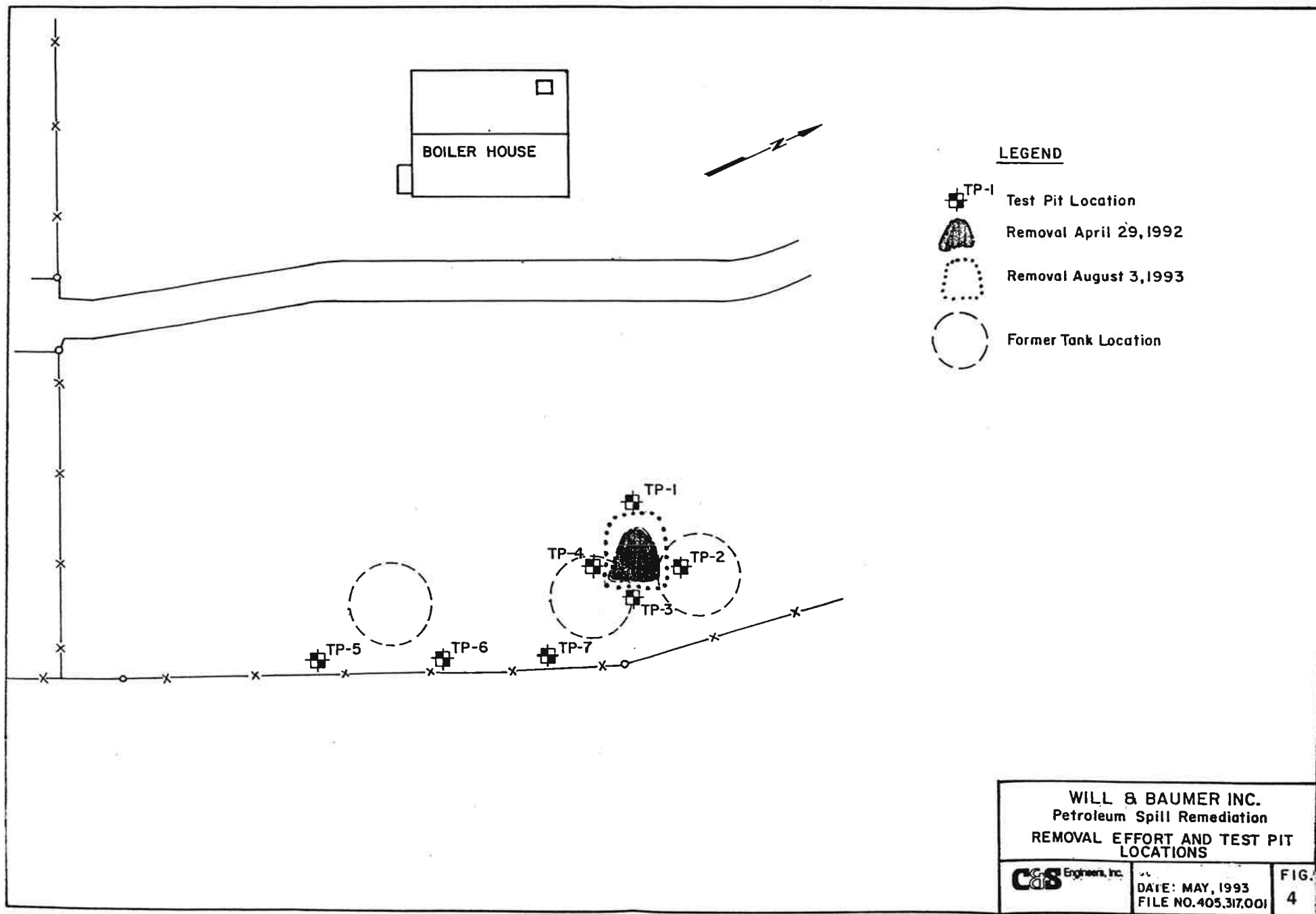


Not to Scale

Prepared By:
O'Brien & Gere Engineers, Inc.
Syracuse, NY
For:
MacKenzie Smith Lewis
Michell & Hughes,
Syracuse, NY

**Figure 3
Will & Baumer Facility**

Source: Will & Baumer, Mailing No. 1, p. 001933



Source: Will & Baumer, Mailing No. 1, p. 001620